

Solutions for Enabling Lifetime Customer Relationships

The ROI of Data Quality

WHITE PAPER:
DATA MANAGEMENT



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ABSTRACT

FOR AT LEAST A DECADE NOW, ANALYSTS AND EXPERTS HAVE BEEN TOUTING THE ECONOMIC BENEFITS OF IMPROVEMENTS IN DATA QUALITY. GOOGLE “ROI OF DATA QUALITY,” AND YOU’LL FIND NO SHORTAGE OF PAPERS AND ARTICLES TO PERUSE THAT ADDRESS THE UNREALIZED REVENUES AND SAVINGS EMBEDDED ALONG WITH DATA ERRORS, INCONSISTENCIES, OMISSIONS AND DUPLICATIONS.

YET, A GARTNER STUDY¹ OF MORE THAN 140 COMPANIES FOUND THAT, ON AVERAGE, COMPANIES ESTIMATED THEY WERE LOSING AN AVERAGE OF \$8.2 MILLION A YEAR BECAUSE OF POOR DATA QUALITY. LOSSES OF MORE THAN \$20 MILLION A YEAR WERE CITED BY 22 PERCENT OF RESPONDENT ORGANIZATIONS, AND 4 PERCENT PUT ANNUAL LOSSES AT MORE THAN \$100 MILLION.

ACCORDING TO GARTNER², “AS MORE ORGANIZATIONS SEEK TO CAPITALIZE ON THE VALUE OF THEIR INFORMATION ASSETS, THE IMPORTANCE OF THE DATA QUALITY DISCIPLINE CONTINUES TO GROW. ANALYTICS (OFTEN INVOLVING BIG DATA TECHNIQUES AND SOURCES) AND THE POTENTIAL TO MONETIZE THE DERIVED INSIGHTS, IF NOT THE DATA ITSELF, REPRESENT A MANDATE FOR STRONGER INFORMATION GOVERNANCE COMPETENCY — IF THE DATA IN QUESTION CANNOT BE TRUSTED, ITS VALUE DROPS DRAMATICALLY.” YET, ACHIEVING AND MAINTAINING DATA QUALITY CONTINUES TO BE AN ELUSIVE GOAL.

THIS WHITEPAPER TAKES FRESH LOOK AT THE VALUE—AND NECESSITY—OF IMPROVED DATA QUALITY. IT OFFERS AN APPRAISAL OF WHAT MAKES FOR GOOD DATA; THE COSTS, HARD AND SOFT, OF DATA SHORTCOMINGS; THE CHALLENGES, OLD AND NEW, THAT MAKE ACHIEVING OUTSTANDING DATA QUALITY SUCH A DAUNTING TASK; PLUS INSIGHTS FROM INDUSTRY EXPERTS ON HOW TO MOVE THE NEEDLE ON DATA QUALITY AND BUSINESS INCOME.

¹Gartner, “Organizations Perceive Significant Cost Impact from Data Quality Issues,” Ted Friedman (14 August 2009).

²Gartner, “Gartner Magic Quadrant for Data Quality Tools,” Ted Friedman (7 October 2013).

UNLESS YOU ARE IN THE BUSINESS OF BUYING AND SELLING DATA, DATA HAS LITTLE VALUE IN AND OF ITSELF.

What makes for quality data?

In the simplest sense, good data is data that is “fit for use”—and its uses are many:

- Per Andreas Bitterer, VP, Gartner Research, “Organizations need accurate and trustworthy data to make intelligent business decisions.”
- Per Navin Sharma, VP, Product Management, Customer Information Management, Pitney Bowes Software, “Enterprise data is the lifeblood of any organization, driving critical daily operations and strategic business decisions around customer services, market growth and competitive threats.”
- Per Dave Frankland, VP-Principal Analyst at Forrester Research, [Businesses] need to use customer intelligence to deliver customer knowledge and insight, to improve customer service, enhance product development, and transform business operations and strategy”.

Data is the basis for intelligence: for understanding and communicating with customers, for automating processes, for streamlining the inflow and outflow of funds, for managing logistics, for managing performance.

The value of data that is fit for use

Unless you are in the business of buying and selling data, data has little value in and of itself. The use of the data is the thing—and the better data fits the more profitable its use can be.

Having the wherewithal to put that data to work is also crucial. The most pristine of data just takes up space if it can't be or isn't effectively applied. Fitness for use alone does not define data's value—the value lies in the actual application of data for intelligence.

This is reflected in the formula for Return on Investment. The formula is simple and universal. The return is a function of the difference between the gain and cost—and each of these is comprised of a range of factors:

Costs: The cost of data quality improvements can be defined along three simple lines:

- **People:** Personnel investments required to implement and maintain data-quality improvements. This includes the human capital investment necessary to change/introduce processes and technology to raise the standard of data quality, and the personnel investment required to institute ongoing data governance.
- **Process:** Changes and enhancements to support introduction of data enhancements and any new data-quality technology. This can, and should, include process changes to support ongoing data governance.

What makes data fit for use?

In considering data quality, expert David Loshin outlines six key considerations that together provide a perspective on the reliability of data in use:

Loshin's Keys to Establishing Fitness for Use	
Completeness	What data is missing or unusable?
Conformity	What data is stored in nonstandard formats?
Consistency	What data values give conflicting information?
Duplicates	What data records or attributes are redundant?
Integrity	What data is not referenced or otherwise compromised?
Accuracy	What data is incorrect or out of date?

Data that is fit for use achieves acceptable levels across all of these considerations, across the business processes that it applies to, and, ideally, all across the organization. across all of these considerations, across the business processes that it applies to, and, ideally, all across the organization.

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Here is a very simple example of how costs from data quality issues can cascade through the organization:

Data issues interfere with a company's ability to keep track of inventory. As a result, the store is out of stock when a customer comes in. Potential costs include:

- The customer goes elsewhere, and the business loses the sale
- The customer monopolizes sales personnel looking up inventory data for other locations, and other customers grow frustrated and go elsewhere. Each of those sales is lost.
- The customer orders the item at the store for delivery from the warehouse. Additional costs include:
 - > Labor for special order
 - > Cost of exception processing
 - > Cost of exception shipping
- Data issues cause confusion about the delivery date, and the item arrives after the customer needs it. Additional costs:
 - > Loss of sale
 - > Return costs
 - > Re-shelving costs
 - > Erosion of customer satisfaction and loyalty

This list is just a start on the costs associated with this particular stocking error. Multiply it by large numbers of customers; large numbers of products; and/or large numbers of stores, and the impact rapidly expands. And note that there are immediate and long-term ramifications because they can result in loss of customers—not just the loss of a single sale.

- **Technology:** Solutions introduced to automate improvements in data collection, integration, sharing, and application across the enterprise.

Gains: It is important to look at gains both in the moment and over time. Left alone, data quality erodes: people move, companies merge, new products and channels arise, personnel changes—the data problems of today that prompt consideration of improvements become bigger when not addressed.

Costs arise when the data maladies throw a proverbial wrench into the application process. In fact, in reflecting on the results of their study quoted earlier in this paper, Gartner commented: “While losses of millions of dollars are significant, we believe these estimates understate the true financial impact on most organizations—the actual magnitude of the problem is typically far greater (by orders of magnitude) than is perceived by business and IT leaders.”

Gains include revenue improvements that result from more effective programs and higher response rates. They also often include indirect benefits with substantial value: resulting process efficiencies and improved compliance, for example, can both translate into substantial indirect savings.

It pays to look all across the organization for ways in which bad data can negatively impact business profitability and customer satisfaction/loyalty. Here's another example: At onboarding, a bank's customer information is not collected completely or accurately:

- Accounts do not get appropriately linked
- Fees are charged incorrectly
- Eligibility for special accounts and/or pricing isn't recognized
- Preferences for communications channels, formats and frequencies are not honored
- Compliance requirements are not met

WITH THE ADVENT OF THE INTERNET, EMAIL, SOCIAL MEDIA AND MOBILE, CONSUMERS HAVE BECOME LESS PATIENT AND MORE DEMANDING.

Each of these problems has operational costs, from workarounds to audit issues. Each has marketing costs because messaging cannot be as accurately targeted or delivered—and lower response rates and opt-outs can result. It can cost the bank in penalties, and it can cause the bank to lose accounts and customers. Again, this is a substantial, but not necessarily exhaustive list of the costs of this data quality issue.

Challenges, old and new, to achieving outstanding data quality

Data quality has long been elusive as a result of traditional barriers. Now, emerging trends have increased the sense of urgency.

Advances in technology have changed how people communicate, raised consumer expectations, and created an onslaught of data and messaging. The accelerated pace of business and customer interactions is generating extraordinary amounts of data—and the growth in data volume is exponential. At the same time, unstructured data from sources such as social media, offers insight for those that can put it to use, but the quantity and lack of format to this data presents extraordinary new challenges.

Data quality: it's a journey, not a destination

Data quality is always a moving target. New addresses, marriages, divorces, births, deaths, purchases, sales—these all change customer data. Redistricting, new compliance rules and regulations, new standards, new systems—all of these can render great data suddenly incomplete or obsolete.

Cleaning up data is one thing—but estimates indicate that as much as 2.1% of contact information goes bad left untended for just one month. So, in considering the ROI for data quality efforts, it's essential to assess the staying power of the improvements.

The new channels have transformed how many people and businesses interact, and the sheer speed with which information can and is expected to be exchanged has rapidly accelerated. With the advent of the internet, email, social media and mobile, consumers have become less patient and more demanding. Internet-only businesses like Amazon have set the bar high for all companies when it comes to data access, exchange and customer service. As a result, businesses face increased pressure to near-immediate access to extensive, high-quality useable data all across their enterprises.

The relatively low costs and ease of issue for email, mobile and social media messaging mean more companies are pushing more information at customers. With the resulting ad fatigue and over-messaging, consumers are far less forgiving of communications that miss the mark. Do not calls, opt-outs, tune-outs and deletes kill communications at a point of time; and, they often cut off a whole communication stream. Now more than ever, organizations must work harder to ensure relevance, respect customer preferences, and focus on those customers most likely to take positive action. Customers want to be quickly served and understood; and, in the face of evidence that they are not, they are more likely than ever to seek out businesses that understand and serve them better.

In addition to these new factors, organizations must still contend with traditional obstacles:

Silos: With their different definitions of “fit for use”, different systems, different objectives, different data sources, and different governance methods. Lines of business across organizations collect, keep and apply data in different ways—and with varying levels of success. The customer, however, doesn't care about the inner workings of the business. Wherever they are, and whatever their question, issue or concern, they expect the business as a whole to know them, know their relationships across the enterprise, and be able to address their needs regardless of product, solution or channel. This challenge has only

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grown larger as businesses have combined and expanded, new channels have emerged and the range of their product and service offerings has grown.

Systems: Legacy systems aren't particularly nimble. And they're often not on speaking terms with each other. Businesses wrestle with the challenges of getting systems in sync, often believing this a prerequisite to enterprise-level data quality improvements. Traditionally, the cost of changing systems has been substantial; and the process has disrupted business continuity. Fortunately, new solutions present an alternative to swapping out legacy systems—too many businesses today fail to realize this opportunity.

Ownership Issues: When in doubt, fingers tend to point to IT when it comes time to question data quality. However, IT doesn't use the data, nor do they typically source it; and, data usage determines its value. Increasingly, businesses are realizing that responsibility for data quality must rest with personnel all across the organization. IT can facilitate its distribution and manage automation of certain governance and quality screens—but those who enter and apply the data must also take considerable responsibility for its fitness for use.

Lack of management support: Because data usage is pervasive throughout the organization and customers expect business personnel to have access to the same data across the enterprise, data quality needs to be an enterprise-level concern, and it needs executive management support. Trying to raise enterprise data quality without engaging departments all across the business is like trying to change the course of an ocean liner with a paddle—the solution simply isn't sufficient to address the task at hand. The integrity of the data needs to be clearly understood and supported by all—and accountability needs to lie with every employee within the organization, not just data stewards, data custodians, or even IT. In the most successful data quality efforts, every corporate citizen upholds the corporation's ethical standards, best practices, and laws, and adheres to best practices and data governance rules.

Costs: Particularly in difficult economic times, businesses look for clear cost-justification—and a quick return on any investment. If the cost benefits of data-quality improvements are not clearly delineated (and, as mentioned above, they are often seriously understated), gaining buy-in for major data quality initiatives is difficult at best.

Making the case for data quality

Ideal data quality initiatives encompass the whole of the enterprise. But practical concerns—from costs, to initial lack of management commitment, and more—may necessitate a step-wise approach. The key is to prove the value of data-quality improvements. With this proof, greater corporate support is easier to muster:

Choose an initial data-improvement project that will help dimension potential for ROI using a simple set of criteria:

Minimal investment: Many of today's data-quality solutions can be introduced without costly investments in people, process and technology. The best of these tap into data where it lives. They integrate with existing legacy systems rather than necessitating systems replacements. And this minimizes expense while maximizing implementation speed.

Measureable results: To make the case for program expansion, it is essential to choose initial initiatives that can yield clear, quantifiable results. This will help make the case for the importance of data-quality improvements.

Powerful business impact: Targeting improvements that have the highest potential for the largest return on investment helps to generate the most compelling results. Demonstrating substantial returns on investment captures management attention and cross-organizational demand for additional data-quality programming.

Clear opportunity for program expansion: Initial programming that lays the foundation for enterprise-wide growth in data quality helps to set the stage for expansion. It is important to avoid "one-offs" but rather select initial programming that can easily be implemented across a wider swath of the organization.

TAKING THE NEXT STEP MAY BE EASIER THAN YOU THINK

By focusing on these criteria, businesses place themselves in a strong position to make their case for larger scale data quality improvements. Marketing successes, and communicating ROI potential, helps to gain management and business backing and support.

Today's strongest solutions enhance the access and usage of data from across different channels, lines of business and legacy systems. Rather than replace, they link to and work with existing databases and systems. These solutions also support real-time data updates, inputs and access: they are not limited to batch-only data improvements.

Real-world examples

In recent months, data quality improvements have made significant differences for organizations in every industry:

Financial Services: Having a single platform to match, merge and cleanse data on a consistent basis made it possible to detect fraud patterns and better serve customers.

Insurance: Greater understanding and flexibility of input data provided a more informed view of a client's projected exposure and enables faster, more accurate decisions based on insurance/reinsurance costs.

Package Delivery: The hard-cost savings and operational efficiencies afforded by address validation and geocoding processes created a beneficial impact of hundreds of thousands of dollars a day. In each case, both businesses and customers benefit—with the result that customer satisfaction and loyalty is strengthened as a result.

Realizing the ROI of Data Quality...today

Basing business decisions and communications on bad data carries substantial risks to business performance and shareholder value. Being data-driven is not “sexy” (in fact, given a selection of options ranging from “exciting” to “boring”, some CMOs chose “boring” to describe having a data-driven organization.) But it is absolutely fundamental. Without good data, businesses make misguided decisions, and they misguide and frustrate their customers with inappropriate, inaccurate communications.

Businesses need good data, they need to understand its limitations, and they need to apply it wisely. As a result, they will benefit from improved revenue, to increased customer satisfaction and loyalty, to greater efficiencies all across their organizations.

Taking the next step may be easier than you think, especially when you work with a technology company that provides a single-source for scalable, modular data quality solutions.

TAKING THE NEXT STEP MAY BE EASIER THAN YOU THINK, ESPECIALLY WHEN YOU WORK WITH A TECHNOLOGY COMPANY THAT PROVIDES A SINGLE-SOURCE FOR SCALABLE, MODULAR DATA QUALITY SOLUTIONS. TO SPEAK WITH THE LEADERS IN DATA QUALITY, ADDRESS VALIDATION AND LOCATION INTELLIGENCE, CONTACT PITNEY BOWES SOFTWARE TODAY AT 1.800.327.8627 OR VISIT PB.COM/SOFTWARE.



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